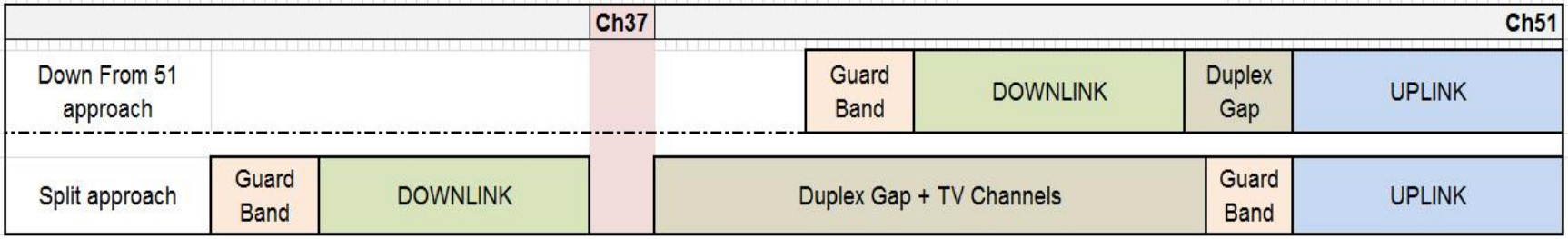
Summary of Intel's Reply Comment

June 6, 2013

For the 600MHz Band Plan, Intel supports:

"Down from 51" band plan approach:

- NPRM proposed multiple approaches, including Down from 51 and Split.
- The Split band approach is the lead FCC proposal
- Down from 51 approach has the most support in the comment record
  - Fewer operational concerns than the split approach



Intel supports (continued):

Scalable national band plan:

- Flexible configurations (3-9 paired channels) depending on cleared spectrum.
- 3 Building Blocks:
  - #1 Primary building block: paired nationwide channels + duplex gap
    - Contiguous, in the Ch 38-51 range
  - #2 Can be TV & guard band, or additional mobile channels
    - Appends to #1 and fills in what's left above ch 37
  - #3 Additional mobile block below ch 37 for high clearing

  Plus special-case modifications for TV to remain above ch37 in congested markets.

(more details to follow)

Intel supports (continued):

Protection bands (duplex gap and guard band):

- Maximize licensed use: no larger than technically reasonable.
- Excess size cuts into licensed spectrum allocation.

Duplex gap: Recommend 10-12 MHz wide

- Determined by technical and practical filtering limitations
- Challenging but feasible

Guard band: Recommend 10-12 MHz wide

- Determined by technical and practical filtering limitations
- Most challenging case: mobile DL adjacent to high power TV

Services in guard band or duplex gap:

Any operations/services permitted should:

- be well-defined prior to the auction
  - Promotes bidder confidence
- not cause harmful interference to adjacent licensed channels
  - Otherwise, spectrally inferior and not fungible.

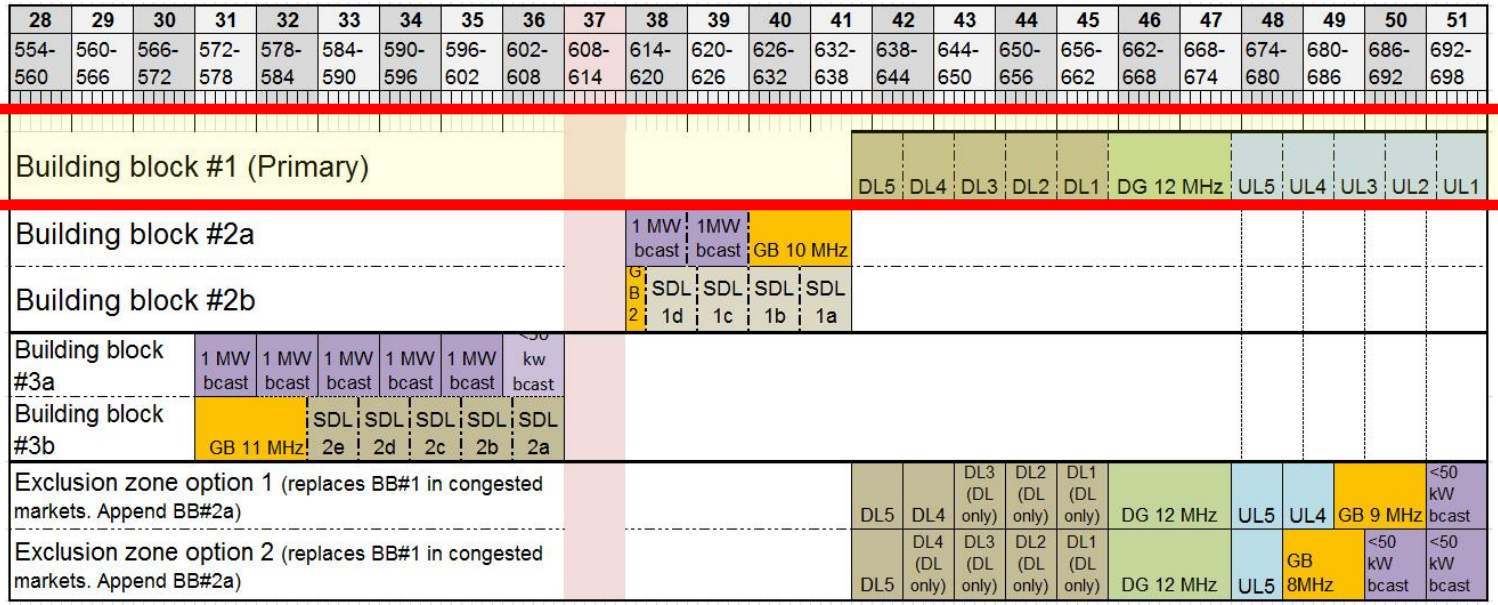
Specifics of Intel's Scalable Band Plan Proposal and the 3 Building Blocks:

Note: Superscripts in following slides refer to page numbers in our Reply Comments.

Building Block #1. Primary Building Block

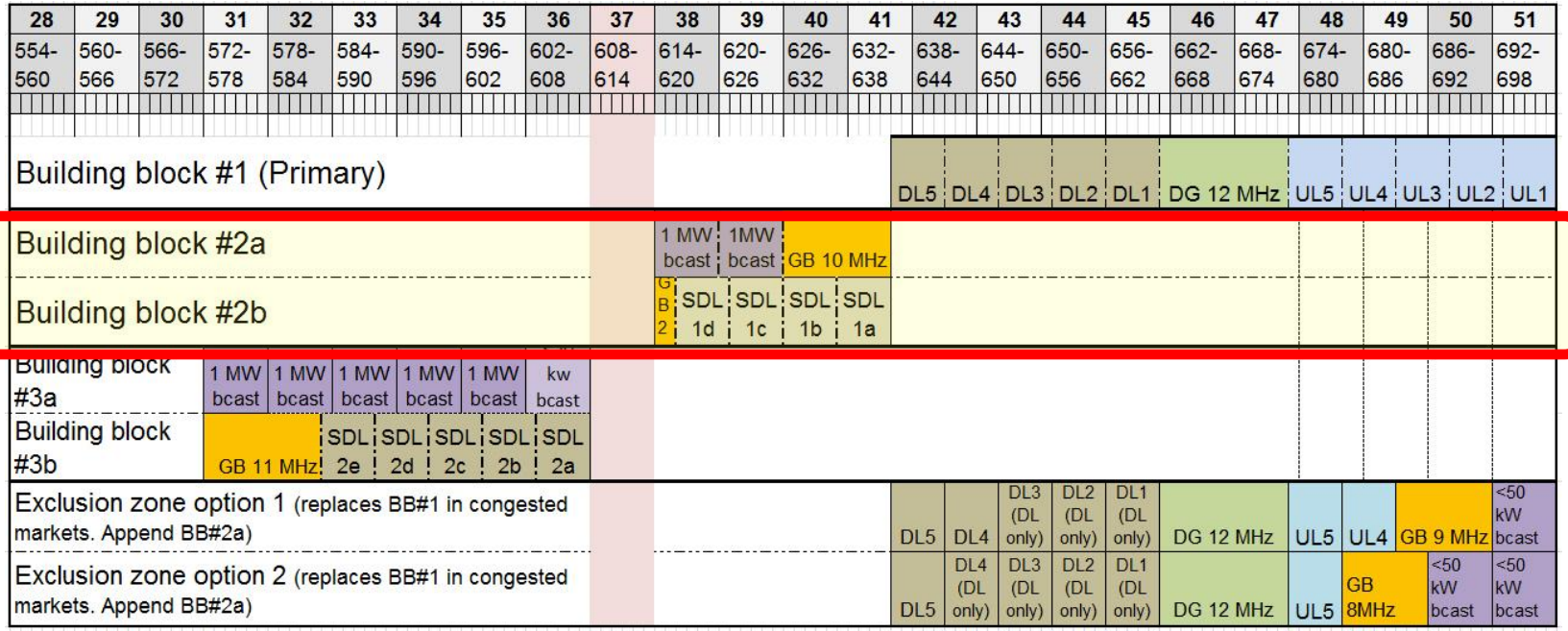
- Consists of nationwide paired spectrum in ch 38-51 range, plus duplex gap
- Optimal size determined from repacking & TV electing to go off air. (pg 13-14)
  - Maximize population coverage, minimize exclusion zones.
- Flexible: can accommodate 3, 4, 5, 6, or 7 paired channels (pg 12-15)
  - >7 paired channels accommodated via Building Block #3

Example building blocks from our Reply Comment: 5 paired channels
- Building blocks expand/contract with more/less paired channels



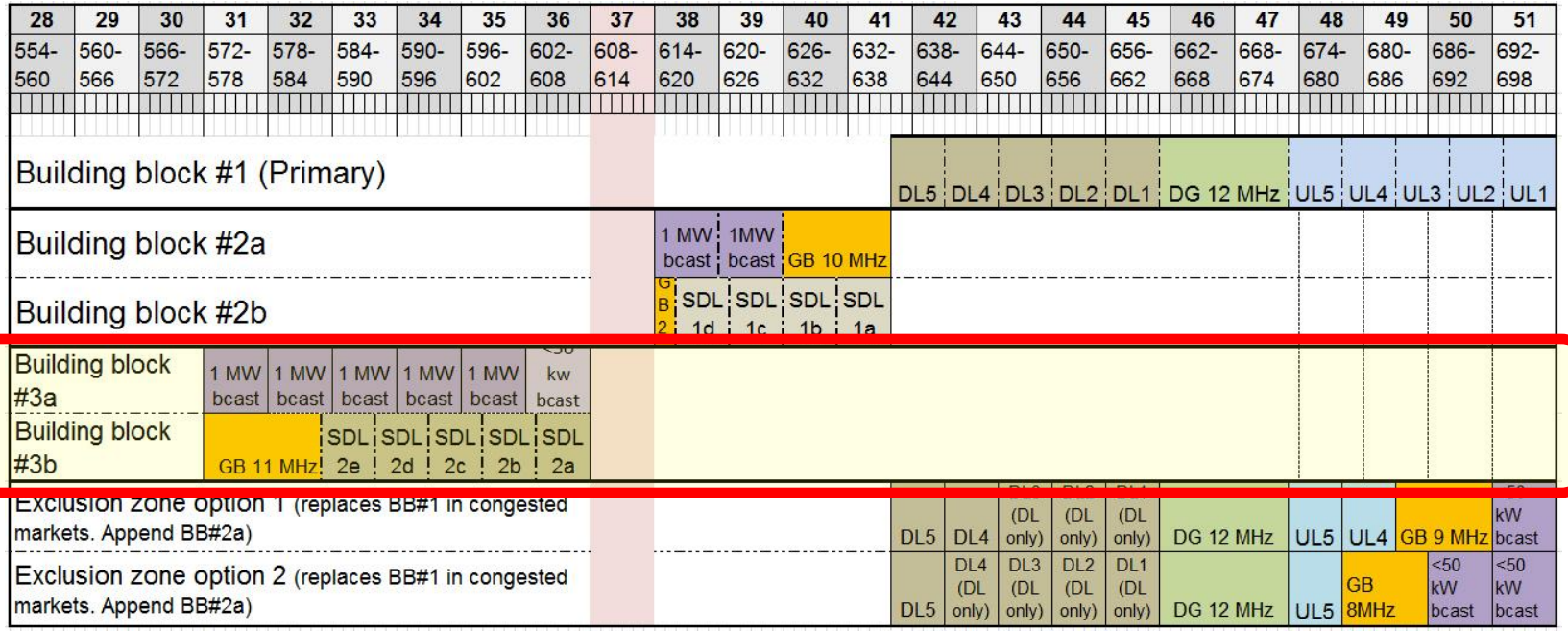
Building Block #2. (Appends to # 1)

- BB #1 and #2 work together to cover ch 38-51
  - As BB#1 expands, BB #2 contracts, and vise versa
- If <84MHz clears, can be either SDL (Supplemental Downlink) or remaining TV stations.(pg 6)
  - Choice depends on TV remaining above channel 37, by market
- If >84MHz clears, BB #2 becomes downlink for a second paired block
  - (Not shown in the graphic below)



Building Block #3. (Appends to #2, via channel 37 which remains in place)

- Used for spectrum below Ch 37
  - When some markets clear >84MHz, but most don't.
- Can be either SDL or remaining TV stations (subject to exclusion zones).
  - Choice depends on TV stations remaining in ch 31-36.
- Flexible: supports other configurations (e.g. more paired channels (pg 6))
  - If 8 or 9 paired channels clear, BB#3 becomes uplink, BB#2 downlink.
  - This gives a second block of 3-4 paired channels



Flexible support, up to 9 paired channels (or as few as 3)

Review: BB #1 + BB #2 covers ch 38-51; BB #3 covers below ch 37

- Ch 38-51 is 84 MHz: supports as few as 3 or as many as 7 paired channels
  - Straightforward adjustments to size of BB #1 and BB #2
  - BB #2 shrinks to zero if 7 paired channels

- For 8 or 9 paired channels, need more spectrum than Ch 38-51.
  - Repurpose BB #3 to increase range
  - Ch 37 disrupts continuity so a 2nd paired block is created
    - Uses BB #3 for uplink, BB #2 for downlink
  - 5 paired (from primary paired block) plus 3 or 4 paired from second paired block

NOTE: The impact of antenna issues (bandwidth, quantity, size), device form-factor, and interference varies as the band plan expands.

Congested Market Building Blocks (pgs 5, 7-8)

- Only used in certain congested markets
  - More TV remaining above ch 37 than BB #2 can accommodate
- Replaces BB #1 and retains same overall size, location.
  - Selected mobile uplink replaced with TV: downlink only.
  - Excludes channels rather than entire market
    - Otherwise: exclude entire market; or reduce paired channels nationwide due to a few congested markets
  - Highly congested markets may still need full market exclusion zone